

Amendments to the Claims

1-20. (Canceled)

21. (Currently Amended) A device for fragmenting a peptide ion or protein ion substantially at one or more of the α -carbon--carbonyl carbon bonds present in the peptide ion or protein ion, the device comprising:

a first component capable of forming the peptide ion or protein ion from a sample,

a second component comprising a source of vacuum ultraviolet radiation adapted to deliver light at an energy sufficient to break at least one of the one or more α -carbon--carbonyl carbon bonds and produce one or more fragments of the peptide ion or protein ion, and

a third component comprising a first mass analyzer, where the mass analyzer is operably connected to receive the one or more fragments of the peptide ion or protein ion.

22. (Original) The device of claim 21 wherein the vacuum ultraviolet radiation has a wavelength of about 157 nm.

23. (Original) The device of claim 21 wherein the source of vacuum ultraviolet radiation is a laser.

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Currently Amended) The device of claim ~~[[26]]~~ 21 wherein the component capable of forming the peptide or protein ion from a sample is an electrospray device.

28. (Currently Amended) The device of claim ~~[[24]]~~ 21 wherein the mass spectrometer device further includes a ~~second~~ forth component comprising a first second mass analyzer.

29. (Currently Amended) The device of claim ~~[[26]]~~ 21 wherein the first mass analyzer is a time of flight mass analyzer.

30. (Canceled)

31. (Original) The device of claim ~~[[26]]~~ 28 wherein the second mass analyzer is a time of flight mass analyzer.

32. (Currently Amended) The device of claim ~~[[21]]~~ 28 further comprising an ion trap adapted for trapping the peptide ion or protein ion prior to fragmentation.

33. (Original) The device of claim ~~[[30]]~~ 32 wherein the ion trap is coupled to a mass analyzing component for analyzing the one or more fragments of the peptide or protein ion the second mass analyzer.

34. (Currently Amended) The device of claim 21 further comprising a ~~fourth~~ fifth component for measuring the mass/charge ratio of the one or more fragments.